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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/664,122	09/17/2003	Roberto Mariani	2060-00401	4747

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EXAMINER

COUSO, YON JUNG

ART UNIT

PAPER NUMBER

2624

DATE MAILED: 03/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/664,122

Applicant(s)

MARIANI ET AL.

Examiner

Yon Couso

Art Unit

2625

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 and 46-57 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-7, 9-11, 46-57 is/are rejected.
- 7) ☒ Claim(s) 4 and 8 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 09/528279.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>9/17/03</u> . | 6) <input type="checkbox"/> Other: _____ |

1. Claims 46, 47, 50, 51, 54, and 55 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 46, lines 2-3, "determining changes in face direction using a plurality of quantitative face directions" is not clear where the plurality of quantitative face directions came from. A face direction was determined based on the single digital image in claim 1, it is not clear where or how the plurality of quantitative face directions are obtained from a single digital image.

Claim 46, lines 4-5, "applying labels to the changes and parsing a sequence of the labels to determine a facial gesture" is also not clear because "the changes" are not clear how it was determined in the previous step. Moreover, it is not clear how parsing a sequence of the labels would result in determining a facial gesture.

Claims 50 and 54 have the same problem as claim 46.

Claims 47, 51, and 55 variously depend from an indefinite antecedent claim.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-3, 5-7, 9-11, and 46-57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Niyogi et al (US Patent no. 6,144,755) in view of Suzuki (US Patent No. 5,859,921).

As per claim 1, Niyogi teaches a method, comprising: computing a rotation of a face using a single digital image by determining the pose of the face; computing a tilt of the face using the single digital image (2 in figure 1, determining the pose of the image and direction of the plurality of images, figure 2 has a set of images at different poses for the use in determining the direction of the head is facing, column 3, lines 22-50); and determining a quantitative face direction of the face in the image using the computed rotation and computed tilt of the face (direction is considered to be rotation of the head, figure 2 shows fifteen different poses are associated with these images which corresponding to the vertical and horizontal position of the head, column 3, lines 22-50). Even though Niyogi teaches determining poses, Niyogi does not explicitly disclose nose axis of face. Suzuki discloses apparatus for processing an image of a face, determining the nose axis ("naris" are the pair of opening of nose and calculating the coordinates of representative point of each candidate area in X-axis and in Y-axis coordinates (column 9, lines 26-36), as shown by Suzuki the use of nose axis of face, in which naris are the pair of opening of nose and calculating the coordinates of the

representative point of each candidate area in X-axis and in Y-axis because it is possible to quickly detect nares (column 9, lines 25-44). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to incorporate the teaching as taught by Suzuki's the use of determining a nose axis of face into the system of Niyogi, because one with ordinary skill in the art would have realize that it is possible to quickly detect nares as suggested by Suzuki (column 9, lines 25-44).

As per claim 2, Niyogi teaches determining the pose. However, Niyogi does not explicitly disclose determining the nose axis by maximizing a correlation measure between a left side and a right side of the face from left and right side of the face from the left and right sub-images of the image (abstract, column 4, lines 43-67, column 6, lines 30-54, column 7, lines 9-17 and 41-62)).

As per claim 3, Suzuki discloses determining the nose axis further comprises comparing one of the left and right sides with a synthetic side derived from the other of the left and right sides using symmetry and a perspective transformation of the other side to compute the correlation measure (column 7, lines 51-62).

As per claims 5 and 9, see claim 1 above.

As per claims 6 and 10, see claim 2 above.

As per claims 7 and 11, see claim 3 above.

As per claim 46, as best understood by the examiner, Niyogi teaches determing changes in face direction using a plurality of quantitative face directions (column 3, lines 29-34); applying labels to the changes (column 3, lines 34-36); parsing a sequence of the labels to determine a facial gesture (column 3, lines 36-50).

As per claim 47, Niyogi teaches generating a plurality of quantitative face directions by obtaining a plurality of digital images of a face and, for each digital image, computing the rotation of the face, computing the tilt of the face, and determining the quantitative face direction using the computed rotation and computed tilt of the face (figure 2 and column 3, lines 22-50).

As per claims 50 and 54, see claim 46 above.

As per claims 51 and 55, see claim 47 above.

As per claim 48, Niyogi clearly teaches providing visual mouse to detect the quantitative face direction as an interface for a computer application (figure 2).

As per claim 49, even though Niyogi does not teach details on providing the quantitative face direction as input to a computer application to provide eye-to-eye contact communication in video-conferencing, this particular intent to use would have been obvious to one of ordinary skill in the art, at the time the invention was made, because Niyogi discloses determining the pose of a human face so that appropriate adjustment can be made in order to maintain the head of the subject is close to the center of the cropping window (abstract). By providing the head of the subject close to the center of the cropping window, in case of video-conferencing, it would provide eye-to-eye contact communication by having the head of the subject close to the center of the cropping window.

As per claims 52 and 56, see claim 48 above.

As per claims 53 and 57, see claim 49 above.

3. Claims 4 and 8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Mihara et al, Christian et al, Maurer et al, Hongo, and Bellono et al are also cited.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yon Couso whose telephone number is (571) 272-7448. The examiner can normally be reached on Monday through Friday from 8:30 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jingge Wu, can be reached on (571) 272-7429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

YJC

March 10, 2006



YON J. COUSO
PRIMARY EXAMINER